222* Too short but not too light – analysis of height and weight in a Belgian CF population

F. Vermeulen, K. De Boeck, M. Proesmans, L. Dupont. *University of Leuven, Leuven, Belgium*

Maintaining adequate growth and nutrition is a major goal in CF patients. When reporting data about a CF clinic, the use of different reference values will influence the frequency of malnutrition in that population (Lai 1998). Cross-sectional data for weight and height of 191 patients attending a single CF centre in 2005 were analysed. Recently published growth curves for our Flemish (north of Belgium) population were used to compute best yearly individual Z-scores for height and weight.
For ease of reporting data are grouped in age categories (table). In PI patients (n = 167) mean Z-score for height is –0.3 to –0.8 but concordant with their mean Z-score for weight. Consequently the %IWH is 100% and above. PI patients do not attain their full growth potential. Contrary, up to age 18 years PS patients (n = 10) have a mean Z-score for height around +0.1 to +0.2 but a mean Z-score for weight that is slightly negative resulting in a %IWH around 92 to 98%, and thus %IWH is lower in PS paediatric patients compared to the PI patients. This could reflect diagnosis of more severely affected PS patients during childhood.
In conclusion, compared to their healthy Flemish peers, PI CF patients in our cohort have adequate weight for height but do not attain their full height potential. Parental height was not available. PS patients are slightly underweight. Our data stress the need for both weight and height Z-scores when evaluating the nutritional status of a CF patient cohort.

Age (y)	n (PS)	Z-sc Weight (PS)	Z-sc Height (PS)	%IWH (PS)	n (PI)	Z-sc Weight (PI)	Z-sc Height (PI)	%IWH (PI)
<1					9	–0.74	–1.35	112%
1–5	2	–0.07	0.23	98%	17	–0.15	–0.31	104%
6–11	4	–0.29	0.16	92%	42	–0.48	–0.57	104%
12–17	4	–0.04	0.11	98%	35	–0.85	–0.78	103%
18 and more	14	0.53	0.22	107%	64	–0.98	–0.83	101%

223 Inverse gender gap in nutritional status; Scandinavian CF study consortium

H.V. Olesen[2], I.E. Moen[3], K. Nilsson[1], T. Pressler[4], A. Lindblad[5], G. Fluge[6], L. Hjelte[1]. *[1]Karolinska University Hospital Huddinge, Stockholm, Sweden; [2]Aarhus University Hospital Skejby, Aarhus, Denmark; [3]Ullevaal University Hospital, Oslo, Norway; [4]Rigshospitalet, Copenhagen, Denmark; [5]Queen Silvia Children's Hospital, Gothenburg, Sweden; [6]Haukeland University Hospital, Bergen, Norway*

Aims: To evaluate whether a gender gap resulting in worse outcome for females could be found also in nutritional status in Scandinavia.
Methods: Data from the 659 (352 F) CF patients with pancreatic insufficiency from 7 Scandinavian centres was analysed. Nutritional status was evaluated by anthropometric data, medication, dietary suppl., complications, blood values of vitamins and fatty acids. 261 of the patients also made a 7-day precoded dietary food record.
Results: BMI z-score was lower in males than females, in all age groups except 5–9 yr olds and >45 yrs, though not significantly. No difference in caloric intake (% of standard dietary recommendations) and intake of pancreatic enzymes. Adult males had significantly more vit E and vit D values below normal ($p = 0.013$ and 0.053 respect) but no difference in vit supplementation or dietary intake. Females tended to get CFRD earlier than males (median age 18.5 vs 23 y) but the males did worse with a BMI z-score of –0.85 vs –0.18 ($p = 0.021$). Dietary supplementation differed only for sip feeds (more frequent in boys than girls; 28% vs. 17%, $p = 0.02$) and infusion of fatty acids (more frequent in women than men; 21% vs 17%, $p = 0.035$).
Conclusion: From the lessons learned about the female gender gap, which seems to be narrowing in Scandinavia, we might have had too much focus on the girls/women. This study at least shows us not to forget the male CF patients.
Supported by: Swedish Heart Lung Foundation, Stiftelsen Frimurare-Barnhuset i Stockholm, Norwegian CF Association, Swedish CF Association and an unrestricted grant by Solvay Pharma (DK, S and N).

224 Evaluating knowledge about nutrition in CF adult patients

D. Lahoreau, S. Nobili-Berton, N. Desmazes-Dufeu, H. Mosnier-Pudar, R. Kanaan, P.R. Burgel, D. Dusser, D. Hubert. *Hôpital Cochin APHP, Paris, France*

Introduction: Good nutritional status improves life expectancy in CF. In order to improve nutrition care in the 300 patients treated in our adult CF centre, we evaluated their understanding of food composition and the relationships between nutrition and their disease.
Methods: An 8-item questionnaire was given by the dieticians to the out-patients and hospitalized patients with CF between October 1 and December 31, 2006. The questionnaire investigated their level of knowledge of the possible causes for weight loss and the consequences of exocrine pancreatic insufficiency (PI), their ability to recognize foods containing fat or calcium and to balance their meals, their behaviour to enrich meals and to distribute carbohydrates in case of diabetes (CFRD).
Results: 52 patients were evaluated (24 were seen by the dietician for the first time). Their mean age was 26 years old (18–46), 50% were males, 84% had PI, 44% had glucose intolerance or CFRD. Their mean BMI was 19 kg/m^2 (16–29). All patients, whatever their group, had little knowledge of the relationship between nutrition and CF. Several terms, such as "exocrine pancreatic insufficiency, gastro-oesophageal reflux, intestinal obstruction, . . . ", were unknown to them. Patients seen for the first time had very little knowledge about food composition. All patients previously seen by the dietician knew which foods contained calcium, 92% knew they had to enrich their meals in case of weight loss and 64% how to do it. Nevertheless, only 50% knew which foods contained fat and were able to prepare a balanced meal. Regarding the patients with CFRD, 83% were aware of recommendations for carbohydrate consumption.
Conclusion: Our results show nutrition education programs are essential and must be adapted as a continuous nutritional care.

225 Nutritional status and dietary intake in patients with cystic fibrosis

L. Spirevska, S. Fustik, T. Jakovska. *Pediatric Clinic, Skopje, Macedonia*

Patients with Cystic fibrosis (CF) are advised to consume high energy and high fat food. The recommendations are 120–150% energy compared to the recommended daily intake (RDI) for sex and age, 40% energy from fat and 15% from proteins. The aim of the study was to evaluate the nutritional status and dietary intake in patients with CF treated in our CF Centre in comparison to healthy controls.
Methods: Fifty-five CF patients (mean 9.9 years) were compared to a group of 30 control children. Weight, height and body mass index (BMI) were calculated as standard deviation scores (z-scores). Intakes from 7-day weighed food records were calculated.
Results: Children with CF didn't consume more energy (2120 vs. 2097 ccal/day, $p > 0.05$) and protein (89 vs. 70 g, $p > 0.05$) than control children. The dietary fat intakes were significantly higher (104 vs. 72 g, $p < 0.005$). CF patients consumed 120% RDA energy, 38% fat and 14% proteins. Mean z-height (–0.3 vs.0.4, $p < 0.05$), z-weight (–0.6 vs. 0.4, $p < 0.001$) and z-BMI (–0.5 vs. 0.4, $p < 0.1$) were all lower in CF patients.
Conclusion: In our CF population energy, fat and protein supply is confirming the recommendations. Lower results for zH, zW and zBMI indicate the need of more intensive nutritive care of CF patients.